AMENDMENTS TO THE CLAIMS

Original claims 1-14 were canceled and new claims 15-26 were substituted in the Preliminary Amendment filed March 21, 2005.

Please amend claims 22 and 23 as set forth in the following listing of the claims.

Claims 1-14 (canceled)

15. (previously presented) A method for reversing the direction of rotation of a two-stroke engine whose rotational speed and crank mechanism position are sensed using a suitable sensor system, in which method, in order to reverse the direction of rotation of the engine, the ignition and/or the fuel supply is first switched off, and upon a subsequent coasting of the engine, a targeted early ignition is set when a specific limiting rotational speed is undershot and after, if appropriate, the fuel supply has been resumed; wherein early ignition reverses the direction of rotation of the engine, and the fuel supply and ignition are subsequently controlled in accordance with the reversed direction of rotation; wherein a single sensor interacts

with an incremental transducer having a specific number of transducer segments distributed uniformly over a circumference, and the incremental transducer has a gap; and the instantaneous angular speed of the crank mechanism over the circumference is determined using the transducer segments and the gap in order to determine the crank mechanism position; in which method, when the engine coasts, fluctuations in the angular speed of the crank mechanism, which fluctuations are caused by compression and expansion phases of at least one combustion chamber of the engine, are sensed during one rotation of the engine and are assigned to a specific transducer segment, and the direction of rotation of the engine is determined from the relative angular position of this transducer segment with respect to the gap.

16. (previously presented) The method as claimed in claim 15, wherein, after a reversal of the direction of rotation, the position of the ignition times and, if appropriate, injection times are resynchronized with the gap of the incremental transducer.

17. (previously presented) The method as claimed in claim 15, wherein, after the reversal of the direction of rotation, a rise in the rotational speed is anticipated after a number of sensor signals, the engine being switched off if said rise fails to occur.

18. (previously presented) The method as claimed in claim 15, wherein the engine is a two-cylinder engine with cylinders which are offset 180° on the crank mechanism, and an assignment between the first and second cylinders is interchanged after a reversal of the direction of rotation.

19. (previously presented) The method as claimed in claim 15, wherein, in an engine with more than two cylinders, an assignment between cylinders which are arranged offset with respect to one another by 180° on the crank mechanism is interchanged in pairs, or when the offset of the cylinders deviates, the assignment is predetermined in accordance with the offset with respect to the gap.

20. (previously presented) The method as claimed in claim 15, wherein, in a single-cylinder engine, in accordance with the position of the gap, an assignment in accordance with the position of the gap, with respect to the upper dead center of the piston, is delayed by control means after the reversal of the direction of rotation.

21. (previously presented) The method as claimed in claim 15, wherein, after the early ignition is output, the number of transducer segments of the incremental transducer which match the sensor is counted, and when a specific limiting number is exceeded the engine is switched off.

22. (currently amended) A sensor system, ~~suitable for use in the method as claimed in claim 15, the sensor system~~ comprising: a sensor, a control logic, and an incremental transducer having transducer segments on a rotating component of a two-stroke engine, which transducer segments are distributed uniformly over the circumference; wherein the incremental transducer has a gap which provides information about an angular position of a crank mechanism of the engine, and the control logic determines, by use of the transducer segments, the instantaneous angular speed of the crank mechanism over the circumference, and senses, by use of the incremental transducer, cyclical fluctuations in the angular speed during one rotation of the engine, which fluctuations are caused by compression and expansion phases of at least one combustion chamber of the engine when the engine coasts; and wherein the control logic generates information about the angular position of the crank mechanism by assignment to specific transducer segments of the incremental transducer, and determines the direction of rotation of the engine by counting, between the gap and the computationally determined crank mechanism position, control signals which are triggered by the transducer segments.

23. (currently amended) The sensor system as claimed in claim 22, wherein the gap is provided 90° before the first or single ~~cylinder~~ piston of the engine, viewed in a forward running direction of the engine.

24. (previously presented) The sensor system as claimed, in claim 22, wherein the incremental transducer is composed of 36 transducer segments, two of which are shortened or cut away to form the gap.

25. (previously presented) The sensor system as claimed in claim 22, wherein the sensor is an inductive sensor.

26. (previously presented) The sensor system as claimed claim 22, wherein the sensor is a Hall sensor.